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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,071	08/01/2005	Oleksandr V Vladimirov	KAP-105-A	2769

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EXAMINER

SCHINDLER, TRENT L

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2879

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/534,071	Applicant(s) VLADIMIROV ET AL.	
	Examiner TRENT SCHINDLER	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Rejections under 35 U.S.C. §103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blommerde et al. (Pat. No. 3,983,439) in view of Latassa et al. (Pat. No. 4,335,326).

3. Regarding claim 1, Blommerde discloses a method of introducing mercury into an internal space of an electron lamp comprising :

- Providing a metal container containing liquid mercury (col. 2, line 4)
- Prior to vacuum treatment, mounting said metal container in an exhaust tube in close proximity to an exposed electrode (Fig. 1)
- Upon carrying out vacuum treatment and filling the inner space with an inert gas, separating the portion of the exhaust tube that contains the container from an evacuation unit (col. 2, line 2)
- Heating of the metal container, which results in a rupture of the metal container and intense evaporation of the liquid mercury, thereby resulting in a flow of pure mercury vapor, which flow rapidly fills up said inner space of the lamp (col. 1, line 13)

Blommerde does not disclose the metal container containing a mercury-filled glass capsule, or an opening in the metal container, or that the heating should be performed by a high-frequency induction method.

4. However, in the same field of endeavor, Latassa teaches a glass capsule containing liquid mercury and disposed within a metal container, one end of said container being provided with at least one opening whose diameter is much less than the diameter of a glass capsule (Fig. 2), where the

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container/capsule is heated by RF (high-frequency) induction (col. 2, line 28) such that the capsule is ruptured allowing the escape of the mercury through the opening, since this dispenser is easier to handle than an all-metal dispenser (col. 1, line 40).

5. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the teaching of Latassa in the method of Blommerde, by replacing the container of Blommerde with the container and capsule of Latassa such that an opening is in the direction of the internal space of the lamp, since the mercury dispenser of Latassa is easier to handle than an all-metal dispenser.

6. Neither does Blommerde disclose the separation of the remaining portion of the exhaust tube from the lamp. However, a person of ordinary skill in the art would recognize that removing the remaining portion of the exhaust tube would be advantageous, in that the remaining exhaust tube would provide an increased risk of breakage through normal handling. It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was made to remove the remaining portion of the exhaust tube.

7. Regarding claim 3, Blommerde in view of Latassa discloses the method of claim 1, and Blommerde further discloses the capsule/container being filled using a vacuum method.

8. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Blommerde in view of Latassa, and further in view of Wittmann (Pat. No. 5,006,755)

9. Blommerde in view of Latassa discloses the method of claim 1, but is silent regarding the amount of Hg contained in the glass capsule.

10. However, in the same field of endeavor, Wittmann teaches a metal container filled with 4-8 mg of Hg (falling within the Applicant's specified range of 2.5 mg to 35 mg), since this is the amount of Hg that is typically necessary for operation of the lamp (col. 4, line 1).

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11. It would have been obvious to person of ordinary skill in the art to use an amount of Hg that falls within the applicant's range, since this is the amount of Hg that is typically necessary for operation of an electron lamp containing Hg.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blommerde in view of Latassa, and further in view of Cassidy (Pat. No. 4,182,971).

13. Blommerde in view of Latassa discloses the method of claim 1, but is silent regarding the power of the heating unit.

14. However, in the same field of endeavor, Cassidy teaches using an RF (high-frequency) induction method to heat a capsule similar the modified capsule of Blommerde in 3 seconds, in order to rupture the capsule without completely shattering it (col. 2, line 55).

15. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the time of Cassidy in the modified method of Blommerde, since this would rupture the capsule without completely shattering it, which might result in particles small enough to escape the metal container.

16. A person of ordinary skill in the art would further understand that the amount of power applied to rupture the modified capsule of Blommerde in 3 seconds is comparable to that needed to rupture the similar Applicant's capsule in 1-5 seconds (para. 15 of the instant application), and thus the use of a RF induction unit having a power rating from about 500 W to about 1 kW would be similarly obvious.

17. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blommerde in view of Latassa, further in view of Wittmann, further in view of Cassidy, and further in view Holmes et al. (Pat. No. 4,754,193).

18. Blommerde discloses a method of introducing mercury into an internal space of an electron lamp comprising :

- Providing a metal container containing liquid mercury (col. 2, line 4)

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- Prior to vacuum treatment, mounting said metal container in an exhaust tube in close proximity to an exposed electrode (Fig. 1)
- Upon carrying out vacuum treatment and filling the inner space with an inert gas, separating the portion of the exhaust tube that contains the container from an evacuation unit (col. 2, line 2)
- Heating of the metal container, which results in a rupture of the metal container and intense evaporation of the liquid mercury, thereby resulting in a flow of pure mercury vapor, which flow rapidly fills up said inner space of the lamp (col. 1, line 13)

Blommerde does not disclose the metal container containing a mercury-filled glass capsule, or an opening in the metal container, or that the heating should be performed by a high-frequency induction method.

19. However, in the same field of endeavor, Latassa teaches a glass capsule containing liquid mercury and disposed within a metal container, one end of said container being provided with at least one opening whose diameter is much less than the diameter of a glass capsule (Fig. 2), where the container/capsule is heated by RF (high-frequency) induction (col. 2, line 28) such that the capsule is ruptured allowing the escape of the mercury through the opening, since this dispenser is easier to handle than an all-metal dispenser (col. 1, line 40).

20. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the teaching of Latassa in the method of Blommerde, by replacing the container of Blommerde with the container and capsule of Latassa such that an opening is in the direction of the internal space of the lamp, since the mercury dispenser of Latassa is easier to handle than an all-metal dispenser.

21. Neither does Blommerde disclose the separation of the remaining portion of the exhaust tube from the lamp. However, a person of ordinary skill in the art would recognize that removing the remaining portion of the exhaust tube would be advantageous, in that the remaining exhaust tube would provide an increased risk of breakage through normal handling. It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was made to remove the remaining portion of the exhaust tube.

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22. Blommerde in view of Latassa is silent regarding the amount of Hg contained in the glass capsule.

23. However, in the same field of endeavor, Wittmann teaches a metal container filled with 4-8 mg of Hg (falling within the Applicant's specified range of 2.5 mg to 35 mg), since this is the amount of Hg that is typically necessary for operation of the lamp (col. 4, line 1).

24. It would have been obvious to person of ordinary skill in the art to use an amount of Hg that falls within the applicant's range, since this is the amount of Hg that is typically necessary for operation of an electron lamp containing Hg.

25. Blommerde in view of Latassa and Wittmann is silent regarding the power of the heating unit.

26. However, in the same field of endeavor, Cassidy teaches using an RF (high-frequency) induction method to heat a capsule similar the modified capsule of Blommerde in 3 seconds, in order to rupture the capsule without completely shattering it (col. 2, line 55).

27. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the time of Cassidy in the modified method of Blommerde, since this would rupture the capsule without completely shattering it, which might result in particles small enough to escape the metal container.

28. A person of ordinary skill in the art would further understand that the amount of power applied to rupture the modified capsule of Blommerde in 3 seconds is comparable to that needed to rupture the similar Applicant's capsule in 1-5 seconds (para. 15 of the instant application), and thus the use of a RF induction unit having a power rating from about 500 W to about 1 kW would be similarly obvious.

29. Blommerde in view of Latassa, Wittmann, and Cassidy does not disclose the electron lamp being a neon tube. However, in the same field of endeavor, Holmes et al. teaches the use of neon in an electron lamp, since this is a common inert gas to use in an electron lamp.

30. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the modified method of Blommerde to a neon tube, since neon is a common inert gas to use in electron lamps.

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Conclusion

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRENT SCHINDLER whose telephone number is (571)270-3321. The examiner can normally be reached on Monday through Thursday, 7:30 am to 5:00 pm ET.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Trent Schindler
Examiner, 2879

/Nimeshkumar Patel/

| Supervisory Patent Examiner, Art Unit 2879